MODULE NAME	FUNDAMENTAL MATHEMATICS
MODULE CODE	R-FMA 110
NQF LEVEL	5
EXAMINER	MR V. CHAKAWANEI
INTERNAL MODERATOR	MRS M. BOUWER
ACADEMIC HEAD	DR M. BRUWER
TOTAL MARKS	100

Purpose

The purpose of this PDF is to do preliminary work on your e-assignment in preparation for online submission.

Submission of this assignment

• Remember that this assignment can ONLY be submitted online. Please refer to the SANTS Orientation booklet for details.
• Consult the e-CLG in case you have not received your hard copy CLG yet.
• Please note that this assignment has support material on MySANTS to assist you.

INSTRUCTIONS:

ASSIGNMENT PAPER	a) **Read** each question carefully and look at the mark allocation to guide your response.
	b) Attempt to **complete all questions**. Do not leave questions unanswered.
	c) Answer Assignment One in English but for Assignment Two you must answer in the African language of this paper. For example: isiZulu, isiXhosa, Sepedi, Setswana.
	d) All submitted answers **must be written in your own words**. Evidence of plagiarism and improper paraphrasing will be further investigated.
	e) **Include in-text references where applicable (including referring to the CLG)**, as you will have to declare your sources at the end of the paper. The list must be made in accordance with the Harvard-style Referencing Guide employed by SANTS
	f) **Refer to the Student Orientation Booklet** on MySANTS regarding the information on referencing and plagiarism.
SUBMISSION	a) Use a separate document to draft your rough answers.
	b) Hereafter, copy your answers to the platform **using Google Chrome or Firefox as your web browser.**

	c) Carefully check each response before submitting your e-Assignment, **saving** as you complete each question. d) Please note that online submissions should be conducted through your laptop computer, desktop computer, or tablet. **NEVER** use your cell phone. e) Please take note that only **one** submission per student will be allowed.
SUPPORT	a) Should you experience any challenges, notify SANTS immediately. b) Login to MySANTS, select **Enquiry** and then insert your query to receive support. c) Note that support is **ONLY** available from 8:00 am – 4:00 pm during **weekdays; including Saturdays during an exam cycle.**

QUESTION ONE	**15**

1.1 Determine whether the following statements are True or False. You only need to write True or False next to the question number e.g. 1.1.11 True.

1.1.1 Cardinal numbers do not tell us the order, rank, or position. (1)

1.1.2 The number 6 is associated with the following picture as a nominal number.
(1)

1.1.3 The number value of 3 is 30 000 in the number 73 486. (1)

1.1.4 The place value of 4 is hundreds in the number 73 486. (1)

1.1.5 When 15 is doubled and the result is decreased by 15, the answer will be 13.
(1)

1.1.6 Two numbers can be added to each other in any order giving the same result.
(1)

1.1.7 Two numbers can be subtracted from each other in any order giving the same result. (1)

1.1.8 5 671 expressed in roman numerals gives VCLXXI. (1)

1.1.9 Prime factors of 20 are {1; 2; 4; 5; 10; 20}. (1)

1.1.10 $\frac{3}{5} = \frac{15}{25}$ (1)

1.2 Choose the best answer for each of the following questions.

1.2.1 The decimal number 0,005 is equivalent to: (1)

    A. $\frac{5}{1000}$
    B. $\frac{5}{100}$
    C. $\frac{5}{10}$
    D. 5,00
    E. None of the above.

1.2.2 The number 2 850 953 in words: (1)

    A. Two thousand eight hundred and fifty.
    B. Two hundred and eighty-five thousand nine hundred and fifty-three.
    C. Two million eight hundred and fifty thousand, nine hundred and fifty-three.
    D. Two hundred eight hundred and fifty.
    E. None of the above.

1.2.3 What will the next step of the following calculation be: $\frac{4}{8} \div \frac{2}{4}$ (1)

    A. $\frac{3}{4}$
    B. $\frac{4}{8} \times \frac{4}{2}$
    C. 2
    D. $\frac{8}{32}$
    E. None of the above

1.2.4 What will the next step be of the following: $\frac{2}{5} \times 2\frac{1}{15}$ (1)

    A. $(2 \times 6) - (3 \times 5)$
    B. $\frac{10}{18}$
    C. $\frac{2}{5} \times \frac{31}{15}$
    D. $\frac{2}{5} \times 2,15$
    E. None of the above.

1.2.5 Study the table below and determine the value of **A.** (1)

Common Fraction	Decimal Number	Percentage
$\frac{1}{2}$	**A**	50%

    A. $\frac{2}{5}$
    B. 0,5
    C. 5,0
    D. 70%
    E. None of the above

QUESTION TWO	30

2.1 Do research on the advantages of the Hindu Arabic numeration system compared to the Roman numeral system. Write a paragraph of approximately 120 words in which you discuss three advantages. (6)

2.2 Study the following scenarios and identify the misconceptions in each case before rectifying them.

2.2.1 Joe wants to express the commutative property of addition and he writes:

12(30 + 2) = 12 × 30 + 12 × 2. (3)

2.2.2 The simplest way of writing: (3 × 10 000) + 5 million – 480 ÷ 5

                30 000 + 500 000 - 480 ÷ 5   Step 1

                529 520 ÷ 5   Step 2 (6)

2.3 Study the table below.

Move to the right	Move to the left
1 M ÷ 10 = 1 H Th	1 U × 10 = 1 T
1 H Th ÷ 10 = 1 T Th	1 T × 10 = 1 H
1 T Th ÷ 10 = 1 Th	1 H × 10 = 1 Th
1 Th ÷ 10 = 1 H	1 Th × 10 = 1 T Th

1 H ÷ 10 = 1 T	1 T Th × 10 = 1 H Th
1 T ÷ 10 = 1 U	1 H Th × 10 = 1 M

Use the table above to calculate the following sums:

2.3.1 235,654 ÷ 10000. Round off the final answer to 2 decimal places. (2)

2.3.2 7 895,21 × 100 (2)

2.4 Study the number 1 307.

2.4.1 Write the number in words. (2)

2.4.2 Write the number in 2.4.1 in expanded form. (3)

2.4.3 Determine the sum of 1 307 and 13. Express the answer in Roman numerals. (4)

2.5 Write down the number represented in the picture. (2)

HTh	TTh	Th	H	T	U
•	•	•		•	•
•	•	•		•	
•		•		•	
				•	

QUESTION THREE	**25**

3.1 Explain the difference between a factor and a prime factor. Give examples to justify the explanation. (6)

3.2 Refer to the number 80, to answer the following questions.

3.2.1 List down all factors of 80. (2)

3.2.2 List down all the prime factors of 80. (2)

3.2.3 Express 80 as a product of its prime factors. (2)

3.3 The highest common factor (HCF) is the largest common of all factors for certain numbers. Use the method of prime factors to determine the HCF of 24 and 36. (4)

3.4 Sarah claims that the Lowest Common Multiple (LCM) of 8 and 12 is 48. Explain the meaning of LCM and verify the claim by means of calculations. (4)

3.5 In Sarah's community, the Primary school bell rings every 30 minutes and the High school rings every 40 minutes. Both schools start at 8.00am. Determine at what time the bells ring at the same time between 8.30 am and 11am. Show all possible calculations. (5)

QUESTION FOUR	**30**

4.1 A discrete variable is indivisible whereas a continuous variable is divisible. Classify the following as Discreet or Continuous and justify your choice.

4.1.1 I am fifty years old. (3)

4.1.2 I can drink 400,5ml of juice in a minute. (3)

4.1.3 I have 2 brothers and 1 sister. (3)

4.2 Distinguish between like and unlike fractions. Give an example of each to justify the answer. (4)

4.3 Study the following scenario and answer questions that follow:

Mary needs 5m of irrigation pipe for her garden. She found the following three lengths of irrigation pipes in her storeroom; $2\frac{1}{4}m$ and $\frac{3}{10}m$.

4.3.1 Express the two lengths which Mary found in the garage in decimal form. (2)

4.3.2 Prove that Mary still needs to buy 2,45m of pipe to get the 5m for the irrigation. (3)

4.3.3 At ABC store the irrigation pipe is marked at R200 per meter. Mary negotiates and is allowed 15% cash discount. How much will Mary pay if she decides to pay cash for 3m of irrigation pipe. (4)

4.4 During a Mathematics lesson, Sipho was given the sum $4\frac{3}{10} - \frac{3}{5} \div \frac{1}{4}$ to calculate step by step for the rest of the class. Analyse each step that Sipho did and explain the misconception on every step. You may write fractions in words e.g. 1 over 4 or in the form ¼. (8)

$$4\frac{3}{10} - \frac{3}{5} \div \frac{1}{4}$$

$$\frac{34}{10} - \frac{3}{5} \div \frac{1}{4} \quad \text{step 1}$$

$$\frac{34}{10} - \frac{3}{5} \times \frac{1}{4} \quad \text{step 2}$$

$$\frac{28}{10} \times \frac{1}{4} \quad \text{step 3}$$

PEER REVIEW

The Peer-Reviewer should determine if the following assessment components are addressed or should be reviewed. <u>The reviewed assessment should contain track changes and/or comments indicating necessary amendments if needed</u>.

Name and Surname of Peer Reviewer

Mariaan Bouwer

Indicate the learning outcomes covered in this assessment in the table under the Lecturer Review section.

Marks are appropriately allocated to the questions and add up correctly.

☐ Accepted

☒ Should be reviewed

The time allocation is adequate.

☒ Accepted

☐ Should be reviewed

The front matter of the assessment is correct.

☒ Accepted

☐ Should be reviewed

Language usage is correct and understandable. No spelling mistakes.

☒ Accepted

☐ Should be reviewed

Technical quality is acceptable.

☒ Accepted

☐ Should be reviewed

Instructions to students are unambiguous.

☒Accepted

☐Should be reviewed

Assessment is aligned to a suitable/adequate amount of learning outcomes of the module.

☒Accepted

☐Should be reviewed

Assessment set at the appropriate NQF level.

☒Accepted

☐Should be reviewed

There is a differentiation in cognitive levels of questioning (Use of taxonomy).

☒Accepted

☐Should be reviewed

The differentiation mentioned above is appropriate for an online assessment. E.g. adequate higher-order thinking questions.

☒Accepted

☐Should be reviewed

Assessment has a variety of question types (e.g. short and longer-type, case studies, images).

☒Accepted

☐Should be reviewed

The memorandum is complete, i.e. every question has a complete answer, corresponding to the task demand.

☒Accepted

☐Should be reviewed

The memorandum contains quotations or references to the CLG where relevant to assist the marker in detecting plagiarism.

☐Accepted

☒Should be reviewed

The instructions to markers are clear and correspond to the task demand.

☒Accepted

☐Should be reviewed

Core readers, recommended readers or extracts from academic texts are incorporated in the assessment.

☒Accepted

☐Should be reviewed

General Comments

Revise mark allocation = 106

Include page numbers of CLG for markers.

Date of final review:

16/01/2023

Select one of the following outcomes:

☐Approved

☒Approved with changes

☐Not approved

ACADEMIC HEAD REVIEW

The Academic Head should determine if the following assessment components are addressed or should be reviewed. The reviewed assessment should contain track changes and/or comments indicating necessary amendments if needed.

Name and Surname

*Indicate the learning outcomes covered in this assessment in the table in the Lecturer Review section.

Marks are appropriately allocated to the questions.

☐ Accepted

☐ Should be reviewed

The time allocation is adequate.

☐ Accepted

☐ Should be reviewed

The front matter of the assessment is correct.

☐ Accepted

☐ Should be reviewed

Language usage is correct and understandable.

☐ Accepted

☐ Should be reviewed

Technical quality is acceptable.

☐ Accepted

☐ Should be reviewed

Instructions to students are unambiguous.

☐Accepted

☐Should be reviewed

Assessment is aligned to a suitable/adequate amount of learning outcomes of the module.

☐Accepted

☐Should be reviewed

Assessment set at the appropriate NQF level.

☐Accepted

☐Should be reviewed

There is a differentiation in cognitive levels of questioning (Use of taxonomy).

☐Accepted

☐Should be reviewed

The differentiation mentioned above is appropriate for an online assessment. E.g. adequate higher-order thinking questions.

☐Accepted

☐Should be reviewed

Assessment has a variety of question types.

☐Accepted

☐Should be reviewed

The memorandum is complete, i.e. every question has a complete answer, corresponding to the task demand.

☐Accepted

☐Should be reviewed

The memorandum contains quotations or references to the CLG where relevant to assist the marker in detecting plagiarism.

☐Accepted

☐Should be reviewed

The instructions to markers are clear and correspond to the task demand.

☐Accepted

☐Should be reviewed

Core readers, recommended readers or extracts from academic texts are incorporated in the assessment.

☐Accepted

☐Should be reviewed

General Comments

Date of final review:

Select one of the following outcomes:

☐Approved

☐Approved with changes

☐Not approved